

Our present knowledge of the higher flora has been brought to its present condition by the contributions of material from hundreds of individuals all over the country. A knowledge of our mycological flora must be brought about in the same way and none are in better condition to help in this matter than these clubs whose primary object is the study of these interesting plants. In order to direct the effort of these clubs so as not to waste energy I would suggest for the present year concentration of effort on certain definite groups of genera.

I would suggest some such series as *Boletus*, *Boletinus*, *Coprinus*, *Lactarius*, *Russula*, *Hygrophorus*, *Lentinus*, and *Marasmius*. Other generic groups need not be neglected but the principal effort might be directed to the above. They are: (1) Easily recognized genera, and (2) contain for the most part edible species, and (3) in most cases are in crying need of a good descriptive synopsis of species. The form of field notes suggested in the next article will take time and patience but will place us in possession of field data that could be obtained only by fieldworkers.

Could the efforts of the clubs or of isolated individuals all over the country be directed toward these genera for one or two seasons and the results with the carefully preserved material be transmitted to a common center for collation and comparison it would serve as the basis of a fairly complete knowledge of the genera in question, their habits, variation, season, and distribution. Such combined effort would count in a single direction and results now scattered and often wasted would be saved and utilized for the help of others in the future.

COLUMBIA UNIVERSITY, January 1, 1902.

THE FIELD STUDY OF MUSHROOMS

BY F. S. EARLE

In no group of plants is careful study in the field so necessary as with the mushrooms, since their soft fleshy texture makes it impossible to prepare them for the herbarium in any way that will fully retain the characters of the fresh plant. In nearly all other groups of plants material hastily gathered and prepared in the

field can be studied at leisure in the herbarium almost as well as if it were in a fresh state. A dried mushroom, unless accompanied by full and carefully made field notes, is usually almost or quite worthless for purposes of identification or study. It is this fact more than any other that accounts for our present scanty and unsatisfactory knowledge of the mushroom flora of North America. It must not be inferred from the above that the dried specimens are useless, and can therefore be dispensed with. On the contrary, they should be prepared and preserved with great care, since they serve to interpret the descriptions, and, while not preserving fully the characters of the fresh plant, they do preserve some of them, and often besides develop quite good ones of their own. They should be dried quickly by fire-heat in a wire rack placed over a stove or lamp. They should then be stored in pasteboard boxes, and should not be moistened and pressed flat, as is sometimes advised. Before drying the plants, each lot should be carefully studied, and a full description drawn up of all the points likely to be useful in determining the species. This is time-consuming work, but upon its faithful performance the entire value of the collection will depend. In order to save time and to systematize the work, I have devised the following description-blank :*

| | |
|-----------------|----------------|
| Name | Veil |
| Habitat | Annulus |
| Habit | Stipe |
| Pileus | size |
| size | shape |
| shape | surface |
| color | color |
| surface | substance |
| margin | Volva |
| Lamellae | Flesh |
| attachment | color |
| number | changes |
| shape | taste |
| color | odor |
| spores | |

*This is here printed in two columns merely to economize space ; in Professor Earle's blank the printing stands in a single column.—ED.

When printed on slips $4\frac{1}{2} \times 8\frac{1}{2}$ inches, and about fifty of them blocked together on a stiff pasteboard back, it makes a convenient pad to write on and to carry in the pocket. This blank has proved to be of great use not only in saving time but in unifying the descriptions and making them fully comparable one with another. Without some such guide and reminder one will surely omit, in writing a description, some of the above points, making a comparison of the descriptions very unsatisfactory. Even our best and most careful mycologists when writing descriptions for publication have failed in this uniformity as any one will testify who has attempted to construct keys to the species of the larger genera.

If the numerous people who are now interested in collecting the fleshy fungi would all adopt some such simple plan for unifying and preserving the results of their observations on these interesting plants there is no reason why our knowledge of them might not soon be as complete as it is of the flowering plants. The plan of using description-blanks for field study is not particularly new. Various other forms are in use by different workers. The exact form used is not important. The main thing is to adopt some simple plan that will enable the observer to record in each case all the characters that will be of use in the determination of the plant and the comparison of one species with another. Carefully dried specimens and faithfully drawn descriptions of the fresh plant are equally necessary for the proper representation of these plants in the herbarium. To be fully satisfactory these should be supplemented by photographs and by water-color sketches. It really excites the imagination to think of a large collection of these plants fully represented in each of these ways. For some purposes plants preserved wet, either in alcohol or formalin, would also be useful, but no liquid preservative has been found that is fully satisfactory and such a collection without notes would be no more useful than the dried plants alone.

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